

# Patent Abstracts of Japan

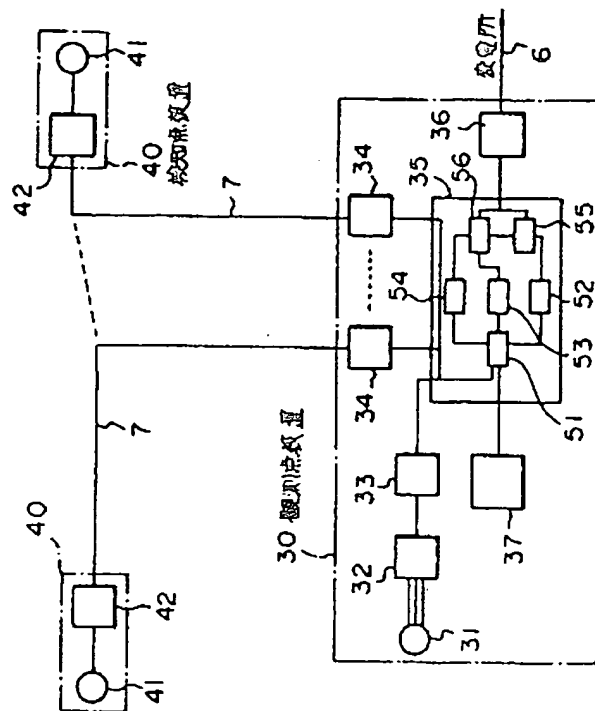
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APPLICANT : OKI ELECTRIC IND CO LTD;

INVENTOR : HASHIMOTO TAMIO;

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TITLE : ONE-OBSERVATION-POINT  
THREE-COMPONENT EARLY  
DETECTION AND WARNING SYSTEM  
FOR EARTHQUAKE



**ABSTRACT :** PURPOSE: To generate a warning in an extremely early stage by estimating a power source distance, epicenter azimuth, and magnitude on the basis of periods and oscillations of first arrival of at least three components at one observation point when an earthquake is detected.

CONSTITUTION: A detection sensor 31 detects earth motions of three components in an up-down, and east-west, and a south-north direction and its output is sent to a control processor 35 through an amplifier 32 and a buffer 33. The controller 35 analyzes observation data sent from a detection point device 40, etc., to discriminate the occurrence of an earthquake, and also to generate a warning if judging the possibility of disaster. A time information generator 37 is provided and a transmitter 42 sends out a detection output signal to a transmission line 7. The control processor 35 consists of a detector 51 which calculates the amplitude, energy, etc., of earth motion, maximum amplitude detector 52, P.S wave discriminator 54, memory 55 stored with maximum amplitude and presence/absence data on the warning output, danger deciding device 56, etc. Consequently, the earthquake is detected as early as possible to estimate its damage area, thereby generating the warning in response to only an earthquake having the possibility of disaster.

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